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Summary

Status	Under Evaluation
Processing Location	ARC
Functional Area	DPB - Computer Science - (A.K. Chandra)
Attorney/Patent Professional	Alison Mortinger/Fishkill/Contr/IBM
IDT Team	Alison Mortinger/Fishkill/Contr/IBM; Sheila Hill/Almaden/IBM
Submitted Date	
Owning Division	RES [illegible]
PVT Score	48
Lab	
Technology Code	
Incentive Program	

Inventors with Lotus Notes IDs

Inventors: Reiner Kraft/Almaden/IBM

Inventor Name > denotes primary contact	Inventor Serial	Div/Dept	Manager Serial	Manager Name
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Inventors without Lotus Notes IDs

IDT Selection

IDT Team:	Attorney/Patent Professional:
Alison Mortinger/Fishkill/Contr/IBM Sheila Hill/Almaden/IBM	Alison Mortinger/Fishkill/Contr/IBM

Response Due to IP&L:

Main Idea

***Title of disclosure (in English)**

System and Method for Web Based Sharing of Search Engine Queries

***Idea of disclosure**

1. Describe your invention, stating the problem solved (if appropriate), and indicating the advantages of using the invention.

The invention is related in the area of Internet Search Technology and e-Commerce. It proposes a mechanism for users to share their best search engine queries, and submit them to a web based query service, so that other users can reuse them.

This section comprises of

1. Problem Statement
2. Proposed Solution
3. Functionality
4. Advantages and Benefits

1. Problem Statement

The invention addresses several problems related to Internet based searching. **First, the construction of a "good" query string can take a considerable amount of time.** Even for experienced users, this could be a time consuming process. Mostly users are able to specify what they are looking for using natural language. For instance "I'm looking for an article about Maine Coon cats, which describes theories about their origin" could be a description for a search query. Possible simple search queries could be any permutation of the string "Maine Coon Cats Origin". Search Engine provide Boolean Operators (AND, OR, NOT) to help build more sophisticated queries, in order to narrow down the search result set.

Second, there are many search engines available on the World Wide Web. A user could use HotBot (http://www.hotbot.com), or AltaVista (http://www.altavista.com), or some other search engine. There are also Meta Search Engines available, which are searching many popular search engines simultaneously, merging the search results, and presenting them to the user. Some search engine might provide a better result set, another one could provide no results at all. **The problem is here to find and determine a search engine, which provides a reasonable result set. This process can take up also a considerable amount of time.**

It would be desirable to reuse easily existing queries, and thus benefit from the work other people already did, to find information faster.

Sharing search engine queries within the context of a search engine is already done. **The invention is focused on a solution to provide reuse of search engine queries over the boundary of one search engine provider.**

2. Proposed Solution

I'm proposing a system, which lets user easily share their search engine queries. The invention is not limited to a specific search engine provider. This will solve the following two problems:

a) The reuse of a complex query string
b) Determination of the best search engine provider for this particular complex query string

The way it works is that the invention will reside as a plug-in (proxy) on the client's web browser. This plug-in will detect, whether a search engine query is performed, and offers then to submit this query to the server side component to the invention. Also it allows the user to choose a category, where to place the query in, along with a natural language description of the query itself.

Then the server side component will provide a web based service, letting users browse (and search) through categories of search engine queries. Users then can issue a query easily by clicking on a hyperlink, to reuse and perform the query.

Example

The following example will illustrate how the invention works:

User A uses a web browser, where the client side component of the invention is installed. He/She is looking for an article about the origin of Maine Coon cats. Every time the user performs a search, the query string will be stored on the client side. The invention will use a list GUI, using an integrated browser window. After 10-15 minutes eventually User A found an interesting article, using the query string "origin maine coon" on AltaVista. This query string would look like:

```
http://www.altavista.com/cgi-bin/query?sc=on&q=origin+maine+coon&kl=XX&pg=q&search.x=1
2&search.y=13
```

User A will now simply click on a button "Share last query" or selects a query from the history list of queries. A dialog will pop-up to ask for

1. Category = pets, cats
2. Headline = Origin of Maine Coon Cats
3. Description = Article, which discusses the origin of Maine Coon Cats
4. Recommended Search Result Items = 1, 8
5. Additional attributes [optional]

Then the data will be forwarded to the server side of the invention, where it will be stored in a database. Others users are now able to browse this web based service. Let's say User B is looking for more information about Maine Coon cats. He/She might go to the server side component (web service), simply browse by category (pets, cat), and skim through the headlines. Of course the service could also provide search mechanisms. Once User B found the entry from User A, he/she will activate the hyperlink, which will directly request the corresponding search result set. From the remarks of User A, User B will look at search result item 1 and 8.

3. Functionality

The invention will provide the following functionality:

1. Ability to monitor and detect user's search queries while browsing the web
2. Ability to store and present search queries on the client side of the invention
3. Ability to let users add annotations, etc. to search queries and submit them to the server side component of the invention.
4. Ability to organize, manage, and store submitted search engine queries on the server side of the invention
5. Ability to provide a web based user interface to browse through categories, or search within those

4. Advantages and Benefits

One could see that the time required in our example for User B was considerably less to find the desired information. Essentially User A did most of the "pioneer" work, by building a complex query string, and trying out several different search engines. User B simply reused the query string. Therefore the invention will help to share expertise in form of search engine queries, which will decrease time for searching. The invention could act as a portal site, allowing users to browse areas of their interest. Advertiser's could use this to place targeted ads, shopping opportunities, etc.

Another issue is the high update frequency of web based resources. The advantage of sharing search engine queries, rather then direct bookmarks to resources is that the search result is dynamic. The invention shifts the burden of link maintenance to the search engine provider. The invention will

always provide the most recent set of matching search result items, even if resources moved their location, etc.

Overall the system depends on the volunteer work of users, who share their queries. Thus there has to be some motivation for people, to make their "work" available. There could be several ways to achieve this. A reward system which consists of points etc. Each user, who submits a query string receives a point. Then, for any usage of this query string from other users, this user will receive additional points etc. Points, as a replacement for a monetary system, can be later used to purchase online goods, etc.

Because of the increasing popularity of web communities, the invention might become an important means for exchanging and sharing web based expertise. The system can be expanded to not only share queries, but also URL's etc. For this reason it needs to be protected.

2. How does the invention solve the problem or achieve an advantage (a description of "the invention", including figures inline as appropriate)?
The system comprises of the following components:

Client

1. Query Analyzer
2. Query List Manager

1. Query Analyzer

This component will receive all requested URL strings, and detect, whether the particular URL represents a search query. Incoming URL's are directly received from the web browser, since the invention is implemented as a proxy (between web browser and WWW) web browser plug-in. To determine, whether a URL represents a query, we have to examine the query string part. Typically, a search query will be appended to a URL like this using the standard HTTP GET method:

```
http://www.altavista.com/cgi-bin/query
?sc=on&q=origin+maine+coon&kl=XX&pg=q&search.x=12&search.y=13
```

The "?" signals the start of the query string. In this case the URL would be identified as a query string and forwarded to the Query List Manager component.

A second possibility is that the query will be passed to the search engine using the HTTP POST method. In this case the query string will be passed to the search engine based on a character stream. The Query Analyzer will intercept and store the stream to the appropriate URL record.

2. Query List Manager

Once a query string is identified, it will be received and stored from the Query List Manager. This component will provide a GUI for the user, to select a specific query string, and make them available for sharing. The storage of the query strings could be session based, or more permanently.
If a query string is selected, the user is able to specify additional information (e.g. Title, Description, etc.). Also, a category must be specified. After the data is entered, it will be transferred to the server side component for further storage and processing.

Server

1. Web Server Component

2. Query Database
3. Query Management Unit
4. Representation Manager
5. Accounting Manager
6. Accounting Database

1. Web Server Component

This component will provide web server functionality, session management, etc. in order to provide a web based service. A query string from the client side component will be identified and forwarded to the Query Management Unit. The communication between client and server is HTTP based. Essentially the data can be passed using the HTTP POST method, as described above.

In addition, a HTTP browse request will also be identified, and the specific page forwarded to the Representation Manager.

2. Query Database

This database will store all query strings received from the client side of the invention, along with descriptive information.

3. Query Management Unit

This unit interacts with the Web Server Component, and receives the query string, along with descriptive information. Once the data is received, it will be examined whether it's valid etc. Then the data is stored in the Query Database.
The optional Accounting Manager will be notified, to ensure that the user, who submitted a query, will receive some reward.

4. Representation Manager

This unit provides a GUI to the Query Database. Users are able to browse query strings by categories. It will receive data from the Query Database, using standard web based database access, e.g. ASP, JSP, etc. (Active Server Pages, Java Server Pages). The data will be embedded in web pages, to provide a friendly user interface. If there's a selection of a search query hyperlink, the Web Server Component will notify the Accounting Manager. This allows to reward search queries, which are often used.

All data, which is ready for presentation to the user, will be returned to the Web Server Component,, which will take care of serving the data back to the user.

5. Accounting Manager

This optional component keeps track of users, who submit query strings. It will reward those using a point system, as monetary replacement. Also it will monitor user's selections and choice later on. Overall this component is responsible for proper book keeping.

6. Accounting Database

System Architecture - Client.d

[Figure 1: System Architecture Client]

System Architecture - Server.dc

[Figure 2: System Architecture Server]

Sharing Search Engine Queries Presentatic

[Figure 3: Presentation Slides]

3. If the same advantage or problem has been identified by others (inside/outside IBM), how have those others solved it and does your solution differ and why is it better?
I'm currently not aware of related web based services

4. If the invention is implemented in a product or prototype, include technical details, purpose, disclosure details to others and the date of that implementation.
We intend to implement the invention within the Grandcentral Station site of portals (jCentral, xCentral)

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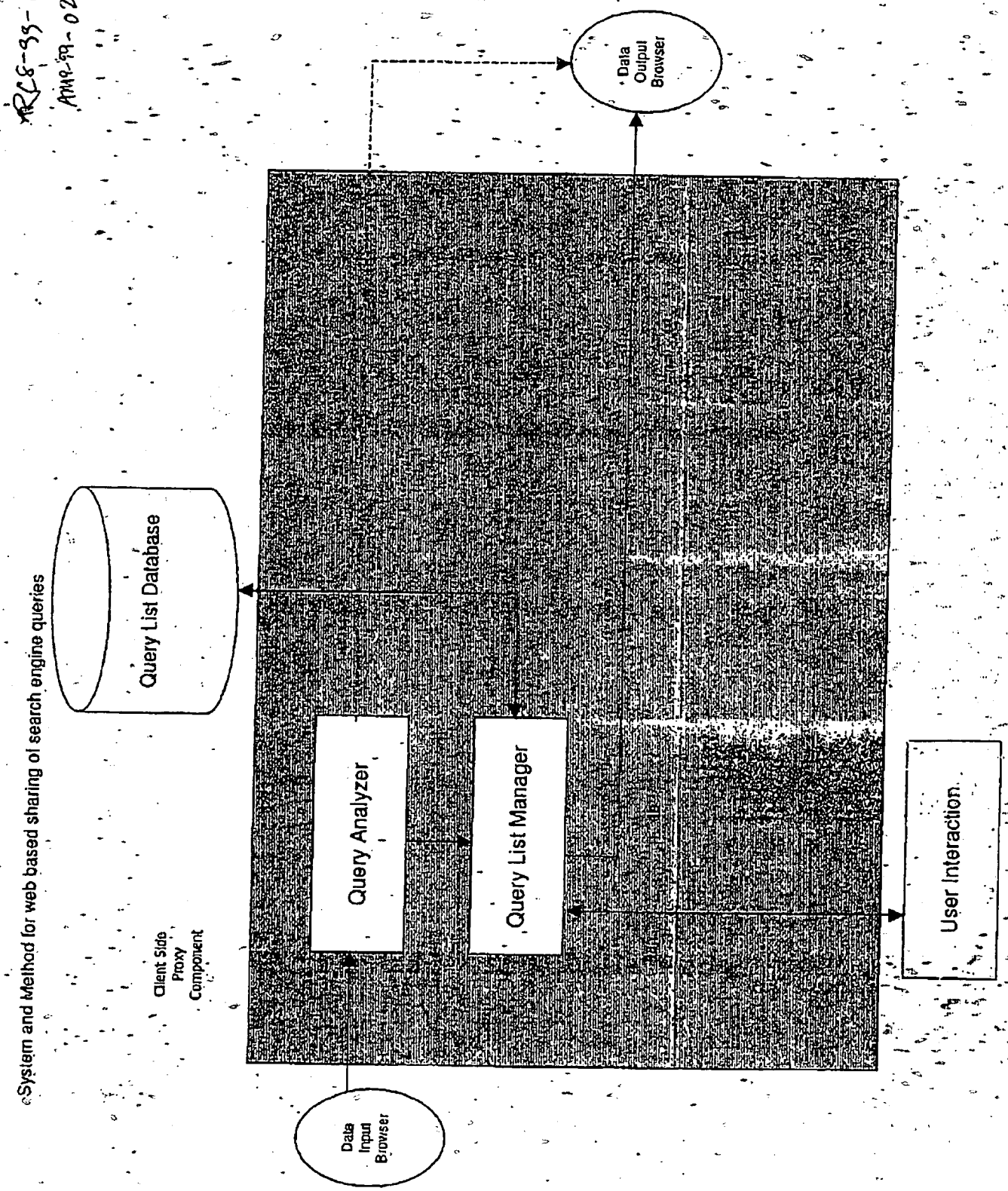

System and Method for web based sharing of search engine queries

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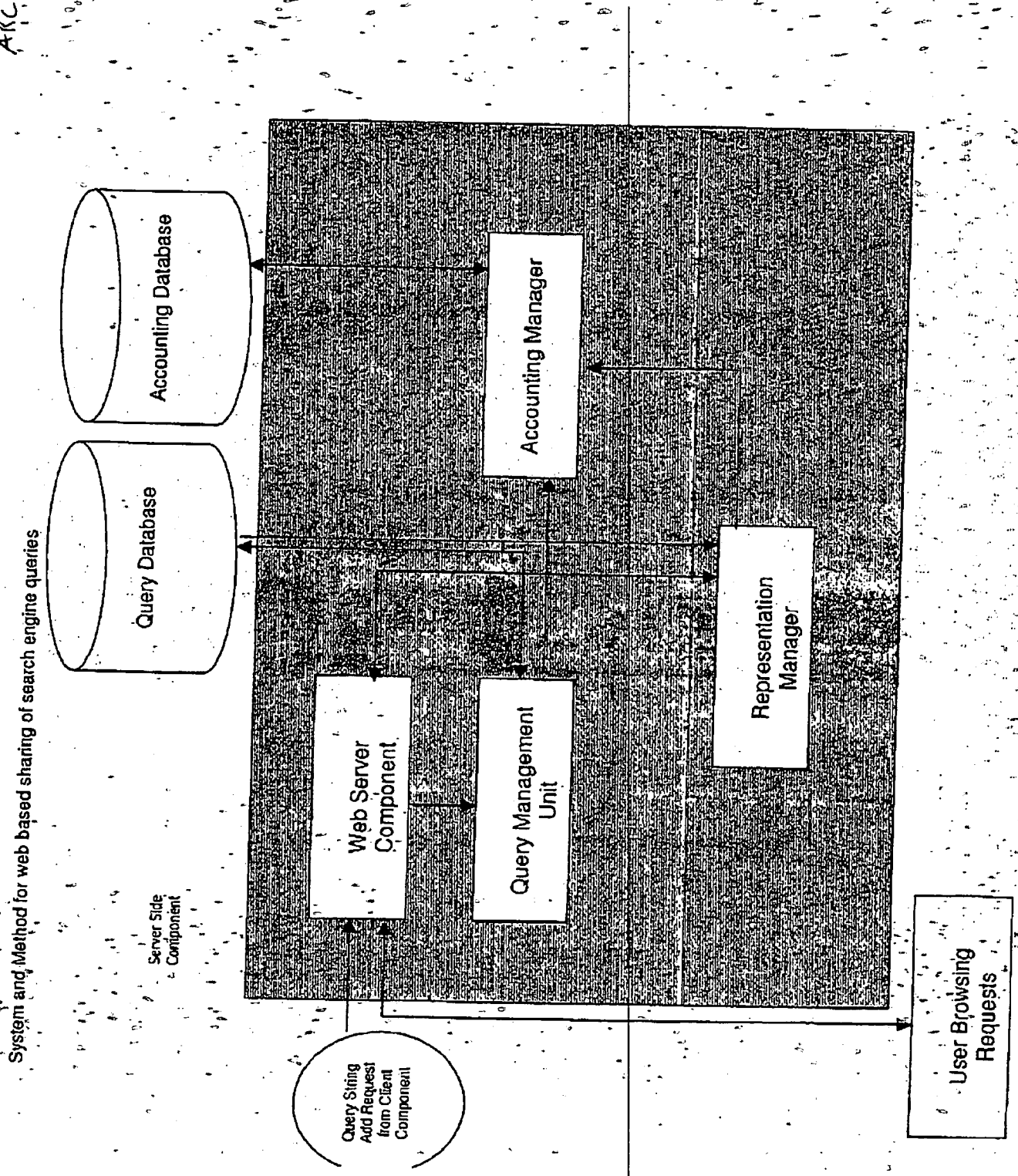
System and Method for web based sharing of search engine queries
Server Side Component
Accounting Database
Query Database
Accounting Manager
Representation Manager
Web Server Component
Query Management Unit
Query String Add Request from Client Component
User Browsing Requests